



IAPG Rec'd PCT/PTO 07 APR 2006

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No. 05-820)

In the Application of:

Haskell

Serial No.: 10/551,798

Filed: September 30, 2005

Title: Phased Array Antenna System with
Variable Electrical Tilt

Art Unit: Unknown

Examiner: Not Assigned

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

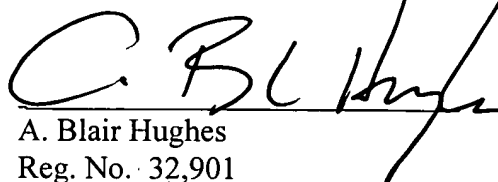
Sir:

TRANSMITTAL LETTER

In regard to the above identified application:

1. We are transmitting herewith the attached:
 - a. Information Disclosure Statement
 - b. Statement of Relevancy of Foreign Language Reference
 - c. Copy of Cited Non-U.S. Patent References
 - d. Return Receipt Postcard
2. With respect to additional fees:
 - a. Attached is a check in the amount of \$-0-
3. Please charge any additional fees or credit overpayment to Deposit Account No.13-2490. A duplicate copy of this sheet is enclosed.
4. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1 hereinabove, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 4th day of April, 2006.

By :


A. Blair Hughes
Reg. No. 32,901

McDONNELL BOEHNEN,
HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
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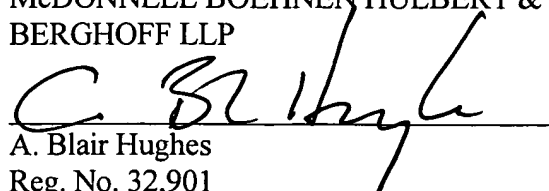
The JP 61172411 reference was cited in an Opposition of European patent application EP 1 239 534 by Radiation Y Microondas, S. A. The reference was cited as disclosing "a multi-stage linear array antenna which pretends to increase the beam tilting effect by setting the first phase shifter for each exciting elements so as to give a beam tilting angle larger than a required value and obtaining a required beam tilting angle by the combined phase shift by the first and second phase shifters so as to reduce a side lobe level produced during prorogation."

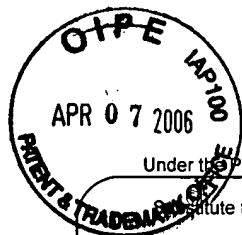
The Okuyama et al. reference was cited in an Opposition of European patent application EP 1 239 534 by Radiation Y Microondas, S. A. The reference was cited as disclosing "a base station antenna products that integrate technologies for beam forming, wind-load shedding and beam tilting. Its drawings show antenna structures serving 120° sectors and phase shifting arrangements."

Respectfully submitted,
McDONNELL BOEHNEN HULBERT &
BERGHOFF LLP

Dated: April 4, 2006

By:


A. Blair Hughes
Reg. No. 32,901



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Patent form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 7

Complete if Known

Application Number	10/551,798
Filing Date	September 30, 2005
First Named Inventor	Haskell
Art Unit	Unknown
Examiner Name	Not Assigned
Attorney Docket Number	05-820

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 2,041,600	5-19-36	Friis	
		US- 2,239,775	3-2-39	Bruce	
		US- 2,245,660	10-12-38	Feldman et al.	
		US- 2,247,666	8-2-39	Potter	
		US- 2,961,620	11-22-60	Sommers	
		US- 3,277,481	10-4-66	Robin et al	
		US- 3,522,558	1-13-69	Stafford et al.	
		US- 4,241,352	12-23-80	Alspaugh et al	
		US- 4,249,181	2-3-81	Lee	
		US- 4,788,515	11-29-88	Wong et al.	
		US- 4,881,082	11-14-89	Graziano	
		US- 5,281,974	1-25-94	Kuramoto et al.	
		US- 4,905,012	2-27-90	Foti	
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁵
		Country Code ³ "Number" ⁴ "Kind Code" ⁵ (if known)				
		WO 89/07837	8-24-89	Wong et al.		
		WO 92/16061	9-17-92	Kangas		
		WO 93/15569	8-5-93	Franza et al.		
		WO 95/10862	4-20-95	Butland et al.		
		EP 0 531 090	3-29-00	Fujil et al.		

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SignatureDate
Considered

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Filing Date	September 30, 2005
First Named Inventor	Haskell
Art Unit	Unknown
Examiner Name	Not Assigned
Attorney Docket Number	05-820

(Use as many sheets as necessary)

Sheet	2	of	7
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		Country Code ³ "Number" ⁴ "Kind Code" ⁵ (if known)				
		EP 0 575 808	12-29-93	Hadzoglou et al.		
		GB 1 314 693	4-26-73			
		AU 38746/93	7-29-93	Butland et al.		
		AU 664625	11-23-95	Mews		
		JP 02-174302 - abstract	7-5-90	Nippon Telegraph		

Examiner Signature		Date Considered	
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Sheet 3 of 7

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		Country Code ³ "Number" ⁴ "Kind Code" ⁵ (if known)				
		JP 04-320121 abstract	11-10-92	Nippon Telegraph		
		JP 04-320122 abstract	11-10-92	Nippon Telegraph		
		JP 05-37222	2-12-93	NEC Corp		X
		JP 05-075340	3-26-93	Hitachi Chem Co.		
		JP 05-121902	5-18-93	Nippon Dengiyou		

Date
Considered

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 4

of 7

Application Number	10/551,798
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Filing Date	September 20, 2005
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First Named Inventor	Haskell
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Art Unit	Unknown
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Examiner Name	Not Assigned
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Attorney Docket Number	05-820
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U. S. PATENT DOCUMENTS

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		Country Code ³ "Number" ⁴ "Kind Code" ⁵ (if known)				
		JP 05-121915	5-18-93	Sumitomo Electric		
		JP 61-172411	8-4-86			
		JP 61-006901	1-13-86	Kokusai Denshin		X
		JP 140985	5-20-94	Fujitsu Ltd		X
		JP 06-196927	7-15-94	NTT Idou Tsuushinmou		X

Examiner
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Sheet

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		Country Code ³ "Number" ⁴ "Kind Code" ⁵ (if known)				
		JP 06-260823	9-16-94	Mitsubishi Electric		X
		JP 06-326501	11-25-94	Sumitomo Electric		X
		GB 2 034 525	6-4-80	Marconi Company		
		WO 01/29926	4-26-01	Deltec Telesystems		
		WO 03/036756	5-1-03	QinetiQ Ltd.		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 6 of 7

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Application Number	10/551,798
Filing Date	September 30, 2005
First Named Inventor	Haskell
Art Unit	Unknown
Examiner Name	Not Assigned
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U. S. PATENT DOCUMENTS

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		Country Code ³ "Number" ⁴ "Kind Code" ⁵ (if known)				
		WO 03/043127	5-22-03	Qinetiq Ltd.		
		EP 1 026 778	8-9-00	Lucent		
		JP 2001-211025 – English Abstract		NTT IDO		
		JP 09-148835 – English Abstract	6-6-97	Nippon		

Examiner Signature		Date Considered	
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Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Complete if Known	
		Application Number	10/551,798
		Filing Date	September 30, 2005
		First Named Inventor	Haskell
		Art Unit	Unknown
		Examiner Name	Not Assigned
Sheet 7	of 7	Attorney Docket Number	05-820

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Strickland, Peter "Microstrip Base Station Antennas for Cellular Communications", IEEE, pp. 166-171 (1991)	
		Bacon, "Variable Elevation Beam-Aerial Systems for 1 1/2 Metres", Journal IEE, pp. 539-544 (1946)	
		Forster, et al. "A Conical Beam Ship Array Antenna with Infinitely Variable Control of the Elevation Angle", pp. 17-20 (1973)	
		Hansen, "Microwave Scanning Antennas" Vol. 3 Array Systems, pp. 2-7 (1966)	
		Smith, textbook: "Circuits, Devices and Systems", A First Course in Electrical Engineering", 4 th Ed., pp. 680-681 (1984)	
		Okuyama et al., "Base-Station Antenna Systems for Car and Handheld Cellular Phones", Mitsubishi Denki Giho, Vol. 68, no. 12, pp. 23-26 (1994)	
		Sumitomo Technical Review, September (1993)	X
		Brochure, "Brown Boveri Phaser for the Horizontal Slewing of Curtain Antennas", Boveri & Cie AG, Mannheim, RFA Classif. n° 1601/242	
		CEL-901 Cellular Antenna Controller User's Manual", issued on 2 April 1992, in the name of CAL Corporation (1991)	

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